

Remarks

Drawings. The informal drawings filed on 3/31/01 were objected to. Corrected formal drawings are submitted herewith as required.

Specification. A requirement was made to update the cross-reference to related applications with serial numbers instead of attorney docket numbers. The update is accomplished by the above amendment.

Claim Rejections. In the office action, claims 1-43 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. patent 6,348,919 ("Murphy"). The rejections were issued erroneously and should be withdrawn.

Claims 1 and 27. In the context of discussing the elimination of stale information from a computer graphics buffer in col. 26, lines 6-44, Murphy discusses only the need to periodically perform a proper clear operation by updating depth, stencil and frame count buffers with new values. To do so, updated values are simply written to each of the locations in an nth region of memory--*regardless of whether all of the pixels in that region are actually stale*. See Murphy at col 26, lines 10-17. Murphy explicitly mentions the expense of such an operation, and advises that the operation should be avoided or at least the cost should be amortized over a number clear operations. Murphy at col. 26, lines 6-9. Murphy does *not* mention performing the following steps during his clear operation: (1) reading a clear count, (2) comparing it with a current clear count, and (3) writing a predetermined value to the pixel location if the clear count does not equal the current clear count. Thus, Murphy does not anticipate Applicant's claims 1 or 27. Indeed, Murphy would appear to teach away from Applicant's claims because of the apparent added expense of the Applicant's read, compare and conditional write steps.

It should also be noted that Murphy does not teach or disclose writing a predetermined value back to the pixel location if the pixel clear count is found not to match the current clear count. While the examiner cited Murphy at col. 26, lines 23-25, those lines merely describe the conventional operation of a fast clear system. Namely, if a pixel's clear count is found to be out of date during a read of that pixel, then the contents of the Window register are returned to the read requester in lieu of the actual contents of the pixel. Those lines from Murphy do *not* teach writing the Window register value back to the pixel. Thus, those lines do not teach eliminating stale data from the pixel.

Claims 12 and 33. Applicant's claims 12 and 33 recite a high-performance technique for performing the stale-data-elimination process of Applicant's claims 1 and 27. Specifically, a block transfer operation is performed wherein the source and the destination regions for the transfer are in fact the same region. Pixel locations in the region are read, their clear count values compared with a current clear count value, and then conditionally a value is written back to the same pixel locations read--all in the context of a block transfer operation wherein data are not transferred to a different location, but instead are conditionally written back to their own original location. Such a technique yields high performance because it utilizes the optimizations that are generally embodied in block transfer hardware and/or software. Murphy does not disclose such a technique. While the examiner cited Murphy at col. 28, line 66 to col. 29, line 3, the cited excerpt merely discusses the conventional use of a block transfer system: Copying a bitmap from one location (off screen) to a different location (on screen). Moreover, no mention is made in the cited excerpt of reading, comparing and conditionally writing during the block transfer. Consequently, Murphy does not anticipate Applicant's claims 12 or 33.

Claims 17 and 38. Applicant's claims 17 and 38 recite a particular time when the novel stale-data-elimination process of claims 1 and 27 should be performed: Namely, after rendering has occurred in a region using fast clear mode and then a determination has been made that the fast clear mode should be discontinued. At col. 26, lines 33-47, Murphy describes a circumstance when fast clear mode should be modified but not discontinued. Specifically, Murphy notes that a first plane might be fast cleared independently of a second plane, and rendering in one or the other planes may occur, and then the second plane might be fast cleared independently of the first. The result would be ambiguous data. But Murphy provides no novel solution to the problem. Instead, Murphy simply says that "[t]he driver software will need to catch this situation, and fall back to using a per pixel write to do the second clear." Murphy at col. 26, lines 40-43. Thus, Murphy does not teach discontinuing fast clear mode in response to the situation, but merely teaches performing an ad hoc per pixel write for all values in the second plane. Such a teaching does not anticipate Applicant's claims 17 or 38.

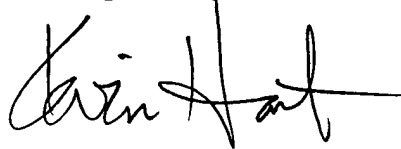
In addition, Applicant's claims 17 and 38 also recite reading, comparing and conditionally writing pixels to eliminate stale information from them. Murphy, on the other hand, simply teaches writing a clear value to all of the pixels in the second plane. Murphy at col 26, lines 40-43. For this reason also, Murphy does not anticipate Applicant's claims 17 or 38.

Dependent claims. All of Applicant's dependent claims are allowable for at least the reason that each depends from one the independent claims discussed above. Applicant believes that further patentable distinctions are recited in the dependent claims, but discussion of such distinctions is unnecessary in light of the above remarks. Applicant reserves the right to discuss such distinctions in future remarks should it become necessary to do so.

Conclusion

Applicant respectfully asserts that each of claims 1-43 patentably distinguishes over the prior art of record. Therefore, Applicant requests withdrawal of the rejections under 35 U.S.C. § 102(e) and allowance of claims 1-43.

Respectfully submitted,



Kevin M. Hart

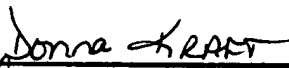
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